

REMARKS

Claim 1 has been amended to incorporate the subject matter of Claims 3 and 4. Claims 5, 6, 12, 13 and 15 have been amended to correct their dependencies and/or to be consistent with the Claim 1. Claims 3 and 4 have been canceled. Upon entry of this Amendment, which is respectfully requested, Claims 1, 2 and 5-15 are pending.

Response to Claim Rejections Under § 103

(I) Claims 1-11 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Application Publication No. 2003/0088006 to Yanagisawa et al in view of U.S. Patent No. 4,594,390 to Abdou-Sabet et al (“Abdou”). Applicants respectfully traverse.

The present claims relate to a method for producing a rubber master batch comprising mixing a natural rubber latex with a slurry solution of a filler previously dispersed into a liquid, characterized in that a static mixer or a high shear mixer comprising a rotor and a stator portion and having a shear speed of not less than 2000/s is used in the mixing of the natural rubber latex and the slurry solution. Thus, the present method is conducted at a temperature under 100°C since an aqueous solution (i.e., “latex”) is used. Further, a goal of the present invention is to improve filler dispersion.

Yanagisawa discloses a high shear mixer of rotor-stator type only for use in making filler slurries. *See*, paragraph [0036].

Abdou discloses a process for forming a thermoplastic elastomer composition comprising a blend of plastic, cured rubber and a vulcanization agent for dynamic vulcanization by masticating a composition comprising a blend of plastic and rubber at a shear rate of at least 2000 sec⁻¹, during vulcanization. However, the mixing condition of Abdou is “dry.” In other words, Abdou does not disclose or suggest mixing a solution, and utilizes a high shear mixer to

promote vulcanization. Further, the mixing step of Abdou's requires high temperatures in order to promote dynamic vulcanization since vulcanization is conducted at a temperature of over 100°C. Abdou fails to disclose or suggest that using a high-shear mixer of the rotor-stator type to mix the rubber solution and the slurry solution will result in homogeneous coagulation,

In addition, Abdou discloses that the resulting thermoplastic elastomeric composition, which contains no fillers, exhibits superior tensile properties including higher strength and greater elongation and (depending upon the amount of rubber) also exhibits better fabricability. *See*, col. 1, lines 35-46. Further, the process is applicable to any blend of plastic, rubber and rubber curative agents. Thus, Abdou does not disclose or suggest using a shear mixer of rotor-stator type to achieve improved filler dispersion.

Accordingly, Yanagisawa and Abdou fail to render obvious the present claims since one skilled in the art would not be motivated to combine Yanagisawa with Abdou. Further, even if one skilled in the art were motivated to combine Yanagisawa with Abdou, the presently claimed invention would not be achieved. Withdrawal of the rejection is respectfully requested.

(II) Claim 12 is rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yanagisawa in view of Abdou-Sabet ("Abdou") and further in view of U.S. Patent Application Publication No. 2002/0111413 to Lopez-Serrano Ramos et al ("Lopez"). Applicants respectfully traverse.

Lopez fails to make up for the deficiencies of Yanagisawa and Abdou discussed above, in addition to failing to actually disclose or suggest substantially simultaneously charging to solution (particularly when paragraph [0057] is considered in view of Lopez's Claim 1, which describes a process in which the fluffy carbon black stream is added to the process after the

rubber solution has been added). Accordingly, withdrawal of the rejection is respectfully requested.

(III) Claims 2-11 and 13-15 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Yanagisawa in view of Lopez-Serrano Ramos (“Lopez”). Applicants respectfully traverse.

Lopez discloses a process for making carbon filled rubbers, whereby fluffy carbon black and a rubber, e.g., emulsion-SBR, are mixed. The emulsion-SBR as described in Lopez is not natural rubber latex as presently claimed. Further, the emulsion-SBR is stable.

In contrast, it is well known in the art that natural rubber latex is very unstable and coagulation easily occurs in the natural rubber latex. Thus, it is very difficult to control the coagulation in a natural rubber latex-carbon black slurry.

Lopez discloses “a static mixer may be satisfactory” (for emulsion-SBR), but also discloses that “high shear rotors are preferred.” *See*, paragraph [0057].

If a person of ordinary skill in the art were to combine Yanagisawa and Lopez and use a natural rubber latex and the high shear rotors, the combination would achieve very bad results because the natural rubber latex is unstable and easily coagulated with a high shear mixer causing very poor dispersions. Poor dispersion causes poor heat resistance, poor durability and poor rolling resistance. Thus, one skilled in the art would not be motivated to use a high shear mixer to mix a natural rubber latex and a slurry because coagulation will occur.

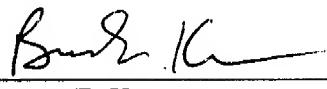
Accordingly, Yanagisawa and Lopez fail to render obvious the present claims. Withdrawal of the rejection is respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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